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Applicant: Oxana Ibraghimov-Beskrovnaya et al.   Examiner: Not Yet Assigned

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Title: COMPOSITIONS AND METHODS FOR TREATING POLYCYSTIC KIDNEY DISEASE

STATEMENT REGARDING SEQUENCE LISTING UNDER 37 C.F.R.§§ 1.821-1.825

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

The Applicant hereby declares that the content of the computer-readable copy of the Sequence Listing furnished herewith is the same as the written copy of the Sequence Listing.

Respectfully submitted,

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SEQUENCE LISTING

<110> Genzyme Corporation

<120> COMPOSITIONS AND METHODS FOR IDENTIFYING
   AND TREATING POLYCYSTIC KIDNEY DISEASE

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<141> 1999-10-22

<150> 60/105,731
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<150> 60/105,876
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gcgctgccct aacg atg ccg ccc gcc gcg ccc gcc cgc ctg gcg ctg gcc      170
              Met Pro Pro Ala Ala Pro Ala Arg Leu Ala Leu Ala
                1           5                  10

ctg ggc ctg ggc ctg tgg ctc ggg gcg ctg gcg ggg ggc ccc ggg cgc      218
Leu Gly Leu Gly Leu Trp Leu Gly Ala Leu Ala Gly Gly Pro Gly Arg
         15                  20              25

ggc tgc ggg ccc tgc gag ccc ccc tgc ctc tgc ggc cca gcg ccc ggc      266
Gly Cys Gly Pro Cys Glu Pro Pro Cys Leu Cys Gly Pro Ala Pro Gly
         30                  35              40

gcc gcc tgc cgc gtc aac tgc tcg ggc cgc ggg ctg cgg acg ctc ggt      314
Ala Ala Cys Arg Val Asn Cys Ser Gly Arg Gly Leu Arg Thr Leu Gly
 45                  50              55                  60

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Pro Ala Leu Arg Ile Pro Ala Asp Ala Thr Ala Leu Asp Val Ser His
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                80                          85                          90

ctg gca gag ctg gat ata agc aac aac aag att tct acg tta gaa gaa    458
Leu Ala Glu Leu Asp Ile Ser Asn Asn Lys Ile Ser Thr Leu Glu Glu
                95                         100                         105

gga ata ttt gct aat tta ttt aat tta agt gaa ata aac ctg agt ggg    506
Gly Ile Phe Ala Asn Leu Phe Asn Leu Ser Glu Ile Asn Leu Ser Gly
        110                         115                         120

aac ccg ttt gag tgt gac tgt ggc ctg gcg tgg ctg ccg cga tgg gcg    554
Asn Pro Phe Glu Cys Asp Cys Gly Leu Ala Trp Leu Pro Arg Trp Ala
125                         130                         135                         140

gag gag cag cag gtg cgg gtg gtg cag ccc gag gca gcc acg tgt gct    602
Glu Glu Gln Gln Val Arg Val Val Gln Pro Glu Ala Ala Thr Cys Ala
                        145                         150                         155

ggg cct ggc tcc ctg gct ggc cag cct ctg ctt ggc atc ccc ttg ctg    650
Gly Pro Gly Ser Leu Ala Gly Gln Pro Leu Leu Gly Ile Pro Leu Leu
                160                         165                         170

gac agt ggc tgt ggt gag gag tat gtc gcc tgc ctc cct gac aac agc    698
Asp Ser Gly Cys Gly Glu Glu Tyr Val Ala Cys Leu Pro Asp Asn Ser
                175                         180                         185

tca ggc acc gtg gca gca gtg tcc ttt tca gct gcc cac gaa ggc ctg    746
Ser Gly Thr Val Ala Ala Val Ser Phe Ser Ala Ala His Glu Gly Leu
        190                         195                         200

ctt cag cca gag gcc tgc agc gcc ttc tgc ttc tcc acc ggc cag ggc    794
Leu Gln Pro Glu Ala Cys Ser Ala Phe Cys Phe Ser Thr Gly Gln Gly
205                         210                         215                         220

ctc gca gcc ctc tcg gag cag ggc tgg tgc ctg tgt ggg gcg gcc cag    842
Leu Ala Ala Leu Ser Glu Gln Gly Trp Cys Leu Cys Gly Ala Ala Gln
                        225                         230                         235

ccc tcc agt gcc tcc ttt gcc tgc ctg tcc ctc tgc tcc ggc ccc ccg    890
Pro Ser Ser Ala Ser Phe Ala Cys Leu Ser Leu Cys Ser Gly Pro Pro
                240                         245                         250

cca cct cct gcc ccc acc tgt agg ggc ccc acc ctc ctc cag cac gtc    938
Pro Pro Pro Ala Pro Thr Cys Arg Gly Pro Thr Leu Leu Gln His Val
                255                         260                         265

ttc cct gcc tcc cca ggg gcc acc ctg gtg ggg ccc cac gga cct ctg    986
Phe Pro Ala Ser Pro Gly Ala Thr Leu Val Gly Pro His Gly Pro Leu
        270                         275                         280

gcc tct ggc cag cta gca gcc ttc cac atc gct gcc ccg ctc cct gtc   1034
Ala Ser Gly Gln Leu Ala Ala Phe His Ile Ala Ala Pro Leu Pro Val
285                         290                         295                         300

act gcc aca cgc tgg gac ttc gga gac ggc tcc gcc gag gtg gat gcc   1082
Thr Ala Thr Arg Trp Asp Phe Gly Asp Gly Ser Ala Glu Val Asp Ala
                        305                         310                         315

gct ggg ccg gct gcc tcg cat cgc tat gtg ctg cct ggg cgc tat cac   1130
Ala Gly Pro Ala Ala Ser His Arg Tyr Val Leu Pro Gly Arg Tyr His
                320                         325                         330
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gtg acg gcc gtg ctg gcc ctg ggg gcc ggc tca gcc ctg ctg ggg aca        1178
Val Thr Ala Val Leu Ala Leu Gly Ala Gly Ser Ala Leu Leu Gly Thr
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gac gtg cag gtg gaa gcg gca cct gcc gcc ctg gag ctc gtg tgc ccg        1226
Asp Val Gln Val Glu Ala Ala Pro Ala Ala Leu Glu Leu Val Cys Pro
        350                 355                 360

tcc tcg gtg cag agt gac gag agc ctt gac ctc agc atc cag aac cgc        1274
Ser Ser Val Gln Ser Asp Glu Ser Leu Asp Leu Ser Ile Gln Asn Arg
365                 370                 375                 380

ggt ggt tca ggc ctg gag gcc gcc tac agc atc gtg gcc ctg ggc gag        1322
Gly Gly Ser Gly Leu Glu Ala Ala Tyr Ser Ile Val Ala Leu Gly Glu
                    385                 390                 395

gag ccg gcc cga gcg gtg cac ccg ctc tgc ccc tcg gac acg gag atc        1370
Glu Pro Ala Arg Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile
            400                 405                 410

ttc cct ggc aac ggg cac tgc tac cgc ctg gtg gtg gag aag gcg gcc        1418
Phe Pro Gly Asn Gly His Cys Tyr Arg Leu Val Val Glu Lys Ala Ala
            415                 420                 425

tgg ctg cag gcg cag gag cag tgt cag gcc tgg gcc ggg gcc gcc ctg        1466
Trp Leu Gln Ala Gln Glu Gln Cys Gln Ala Trp Ala Gly Ala Ala Leu
        430                 435                 440

gca atg gtg gac agt ccc gcc gtg cag cgc ttc ctg gtc tcc cgg gtc        1514
Ala Met Val Asp Ser Pro Ala Val Gln Arg Phe Leu Val Ser Arg Val
445                 450                 455                 460

acc agg agc cta gac gtg tgg atc ggc ttc tcg act gtg cag ggg gtg        1562
Thr Arg Ser Leu Asp Val Trp Ile Gly Phe Ser Thr Val Gln Gly Val
                    465                 470                 475

gag gtg ggc cca gcg ccg cag ggc gag gcc ttc agc ctg gag agc tgc        1610
Glu Val Gly Pro Ala Pro Gln Gly Glu Ala Phe Ser Leu Glu Ser Cys
                480                 485                 490

cag aac tgg ctg ccc ggg gag cca cac cca gcc aca gcc gag cac tgc        1658
Gln Asn Trp Leu Pro Gly Glu Pro His Pro Ala Thr Ala Glu His Cys
            495                 500                 505

gtc cgg ctc ggg ccc acc ggg tgg tgt aac acc gac ctg tgc tca gcg        1706
Val Arg Leu Gly Pro Thr Gly Trp Cys Asn Thr Asp Leu Cys Ser Ala
        510                 515                 520

ccg cac agc tac gtc tgc gag ctg cag ccc gga ggc cca gtg cag gat        1754
Pro His Ser Tyr Val Cys Glu Leu Gln Pro Gly Gly Pro Val Gln Asp
525                 530                 535                 540

gcc gag aac ctc ctc gtg gga gcg ccc agt ggg gac ctg cag gga ccc        1802
Ala Glu Asn Leu Leu Val Gly Ala Pro Ser Gly Asp Leu Gln Gly Pro
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ctg acg cct ctg gca cag cag gac ggc ctc tca gcc ccg cac gag ccc        1850
Leu Thr Pro Leu Ala Gln Gln Asp Gly Leu Ser Ala Pro His Glu Pro
                560                 565                 570

gtg gag gtc atg gta ttc ccg ggc ctg cgt ctg agc cgt gaa gcc ttc        1898
Val Glu Val Met Val Phe Pro Gly Leu Arg Leu Ser Arg Glu Ala Phe
            575                 580                 585

ctc acc acg gcc gaa ttt ggg acc cag gag ctc cgg cgg ccc gcc cag        1946
Leu Thr Thr Ala Glu Phe Gly Thr Gln Glu Leu Arg Arg Pro Ala Gln
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       605                     610                    615                    620

       aac ggc agc gag cct gag agc agg tcc ccg gac aac agg acc cag ctg        2042
       Asn Gly Ser Glu Pro Glu Ser Arg Ser Pro Asp Asn Arg Thr Gln Leu
                               625                    630                    635

       gcc ccc gcg tgc atg cca ggg gga cgc tgg tgc cct gga gcc aac atc        2090
       Ala Pro Ala Cys Met Pro Gly Gly Arg Trp Cys Pro Gly Ala Asn Ile
                       640                    645                    650

       tgc ttg ccg ctg gac gcc tct tgc cac ccc cag gcc tgc gcc aat ggc        2138
       Cys Leu Pro Leu Asp Ala Ser Cys His Pro Gln Ala Cys Ala Asn Gly
                       655                    660                    665

       tgc acg tca ggg cca ggg cta ccc ggg gcc ccc tat gcg cta tgg aga        2186
       Cys Thr Ser Gly Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg
                670                    675                    680

       gag ttc ctc ttc tcc gtt gcc gcg ggg ccc ccc gcg cag tac tcg gtc        2234
       Glu Phe Leu Phe Ser Val Ala Ala Gly Pro Pro Ala Gln Tyr Ser Val
       685                     690                    695                    700

       acc ctc cac ggc cag gat gtc ctc atg ctc cct ggt gac ctc gtt ggc        2282
       Thr Leu His Gly Gln Asp Val Leu Met Leu Pro Gly Asp Leu Val Gly
                               705                    710                    715

       ttg cag cac gac gct ggc cct ggc gcc ctc ctg cac tgc tcg ccg gct        2330
       Leu Gln His Asp Ala Gly Pro Gly Ala Leu Leu His Cys Ser Pro Ala
                               720                    725                    730

       ccc ggc cac cct ggt ccc cag gcc ccg tac ctc tcc gcc aac gcc tcg        2378
       Pro Gly His Pro Gly Pro Gln Ala Pro Tyr Leu Ser Ala Asn Ala Ser
                       735                    740                    745

       tca tgg ctg ccc cac ttg cca gcc cag ctg gag ggc act tgg gcc tgc        2426
       Ser Trp Leu Pro His Leu Pro Ala Gln Leu Glu Gly Thr Trp Ala Cys
                750                    755                    760

       cct gcc tgt gcc ctg cgg ctg ctt gca gcc acg gaa cag ctc acc gtg        2474
       Pro Ala Cys Ala Leu Arg Leu Leu Ala Ala Thr Glu Gln Leu Thr Val
       765                     770                    775                    780

       ctg ctg ggc ttg agg ccc aac cct gga ctg cgg atg cct ggg cgc tat        2522
       Leu Leu Gly Leu Arg Pro Asn Pro Gly Leu Arg Met Pro Gly Arg Tyr
                               785                    790                    795

       gag gtc cgg gca gag gtg ggc aat ggc gtg tcc agg cac aac ctc tcc        2570
       Glu Val Arg Ala Glu Val Gly Asn Gly Val Ser Arg His Asn Leu Ser
                               800                    805                    810

       tgc agc ttt gac gtg gtc tcc cca gtg gct ggg ctg cgg gtc atc tac        2618
       Cys Ser Phe Asp Val Val Ser Pro Val Ala Gly Leu Arg Val Ile Tyr
                       815                    820                    825

       cct gcc ccc cgc gac ggc cgc ctc tac gtg ccc acc aac ggc tca gcc        2666
       Pro Ala Pro Arg Asp Gly Arg Leu Tyr Val Pro Thr Asn Gly Ser Ala
                830                    835                    840

       ttg gtg ctc cag gtg gac tct ggt gcc aac gcc acg gcc acg gct cgc        2714
       Leu Val Leu Gln Val Asp Ser Gly Ala Asn Ala Thr Ala Thr Ala Arg
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Trp Pro Gly Gly Ser Val Ser Ala Arg Phe Glu Asn Val Cys Pro Ala
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ctg gtg gcc acc ttc gtg ccc ggc tgc ccc tgg gag acc aac gat acc      2810
Leu Val Ala Thr Phe Val Pro Gly Cys Pro Trp Glu Thr Asn Asp Thr
            880                 885                 890

ctg ttc tca gtg gta gca ctg ccg tgg ctc agt gag ggg gag cac gtg      2858
Leu Phe Ser Val Val Ala Leu Pro Trp Leu Ser Glu Gly Glu His Val
            895                 900                 905

gtg gac gtg gtg gtg gaa aac agc gcc agc cgg gcc aac ctc agc ctg      2906
Val Asp Val Val Val Glu Asn Ser Ala Ser Arg Ala Asn Leu Ser Leu
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cgg gtg acg gcg gag gag ccc atc tgt ggc ctc cgc gcc acg ccc agc      2954
Arg Val Thr Ala Glu Glu Pro Ile Cys Gly Leu Arg Ala Thr Pro Ser
925                     930                 935                 940

ccc gag gcc cgt gta ctg cag gga gtc cta gtg agg tac agc ccc gtg      3002
Pro Glu Ala Arg Val Leu Gln Gly Val Leu Val Arg Tyr Ser Pro Val
                945                 950                 955

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Val Glu Ala Gly Ser Asp Met Val Phe Arg Trp Thr Ile Asn Asp Lys
            960                 965                 970

cag tcc ctg acc ttc cag aac gtg gtc ttc aat gtc att tat cag agc      3098
Gln Ser Leu Thr Phe Gln Asn Val Val Phe Asn Val Ile Tyr Gln Ser
            975                 980                 985

gcg gcg gtc ttc aag ctc tca ctg acg gcc tcc aac cac gtg agc aac      3146
Ala Ala Val Phe Lys Leu Ser Leu Thr Ala Ser Asn His Val Ser Asn
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Val Thr Val Asn Tyr Asn Val Thr Val Glu Arg Met Asn Arg Met Gln
1005                1010                1015                1020

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Gly Leu Gln Val Ser Thr Val Pro Ala Val Leu Ser Pro Asn Ala Thr
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cta gca ctg acg gcg ggc gtg ctg gtg gac tcg gcc gtg gag gtg gcc      3290
Leu Ala Leu Thr Ala Gly Val Leu Val Asp Ser Ala Val Glu Val Ala
            1040                1045                1050

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Phe Leu Trp Asn Phe Gly Asp Gly Glu Gln Ala Leu His Gln Phe Gln
            1055                1060                1065

cct ccg tac aac gag tcc ttc ccg gtt cca gac ccc tcg gtg gcc cag      3386
Pro Pro Tyr Asn Glu Ser Phe Pro Val Pro Asp Pro Ser Val Ala Gln
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gtg ctg gtg gag cac aat gtc atg cac acc tac gct gcc cca ggt gag      3434
Val Leu Val Glu His Asn Val Met His Thr Tyr Ala Ala Pro Gly Glu
1085                1090                1095                1100

tac ctc ctg acc gtg ctg gca tct aat gcc ttc gag aac ctg acg cag      3482
Tyr Leu Leu Thr Val Leu Ala Ser Asn Ala Phe Glu Asn Leu Thr Gln
                1105                1110                1115

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Gln Val Pro Val Ser Val Arg Ala Ser Leu Pro Ser Val Ala Val Gly
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        cac ccg ctg ccc tcg cct ggg ggt gtt ctt tac acg tgg gac ttc ggg      3626
        His Pro Leu Pro Ser Pro Gly Gly Val Leu Tyr Thr Trp Asp Phe Gly
                      1150                  1155                  1160

        gac ggc tcc cct gtc ctg acc cag agc cag ccg gct gcc aac cac acc      3674
        Asp Gly Ser Pro Val Leu Thr Gln Ser Gln Pro Ala Ala Asn His Thr
        1165                  1170                  1175              1180

        tat gcc tcg agg ggc acc tac cac gtg cgc ctg gag gtc aac aac acg      3722
        Tyr Ala Ser Arg Gly Thr Tyr His Val Arg Leu Glu Val Asn Asn Thr
                      1185                  1190                  1195

        gtg agc ggt gcg gcg gcc cag gcg gat gtg cgc gtc ttt gag gag ctc      3770
        Val Ser Gly Ala Ala Ala Gln Ala Asp Val Arg Val Phe Glu Glu Leu
                      1200                  1205                  1210

        cgc gga ctc agc gtg gac atg agc ctg gcc gtg gag cag ggc gcc ccc      3818
        Arg Gly Leu Ser Val Asp Met Ser Leu Ala Val Glu Gln Gly Ala Pro
                      1215                  1220                  1225

        gtg gtg gtc agc gcc gcg gtg cag acg ggc gac aac atc acg tgg acc      3866
        Val Val Val Ser Ala Ala Val Gln Thr Gly Asp Asn Ile Thr Trp Thr
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        ttc gac atg ggg gac ggc acc gtg ctg tcg ggc ccg gag gca aca gtg      391·
        Phe Asp Met Gly Asp Gly Thr Val Leu Ser Gly Pro Glu Ala Thr Val
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        gag cat gtg tac ctg cgg gca cag aac tgc aca gtg acc gtg ggt gcg      3962
        Glu His Val Tyr Leu Arg Ala Gln Asn Cys Thr Val Thr Val Gly Ala
                      1265                  1270                  1275

        gcc agc ccc gcc ggc cac ctg gcc cgg agc ctg cac gtg ctg gtc ttc      4010
        Ala Ser Pro Ala Gly His Leu Ala Arg Ser Leu His Val Leu Val Phe
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        gtc ctg gag gtg ctg cgc gtt gaa ccc gcc gcc tgc atc ccc acg cag      4058
        Val Leu Glu Val Leu Arg Val Glu Pro Ala Ala Cys Ile Pro Thr Gln
                      1295                  1300                  1305

        cct gac gcg cgg ctc acg gcc tac gtc acc ggg aac ccg gcc cac tac      4106
        Pro Asp Ala Arg Leu Thr Ala Tyr Val Thr Gly Asn Pro Ala His Tyr
        1310                  1315                  1320

        ctc ttc gac tgg acc ttc ggg gat ggc tcc tcc aac acg acc gtg cgg      4154
        Leu Phe Asp Trp Thr Phe Gly Asp Gly Ser Ser Asn Thr Thr Val Arg
        1325                  1330                  1335              1340

        ggg tgc ccg acg gtg aca cac aac ttc acg cgg agc ggc acg ttc ccc      4202
        Gly Cys Pro Thr Val Thr His Asn Phe Thr Arg Ser Gly Thr Phe Pro
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        ctg gcg ctg gtg ctg tcc agc cgc gtg aac agg gcg cat tac ttc acc      4250
        Leu Ala Leu Val Leu Ser Ser Arg Val Asn Arg Ala His Tyr Phe Thr
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        agc atc tgc gtg gag cca gag gtg ggc aac gtc acc ctg cag cca gag      4298
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Trp Pro Pro Phe Pro Tyr Arg Tyr Thr Trp Asp Phe Gly Thr Glu Glu
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gcc gcc ccc acc cgt gcc agg ggc cct gag gtg acg ttc atc tac cga        4442
Ala Ala Pro Thr Arg Ala Arg Gly Pro Glu Val Thr Phe Ile Tyr Arg
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gac cca ggc tcc tat ctt gtg aca gtc acc gcg tcc aac aac atc tct        4490
Asp Pro Gly Ser Tyr Leu Val Thr Val Thr Ala Ser Asn Asn Ile Ser
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gct gcc aat gac tca gcc ctg gtg gag gtg cag gag ccc gtg ctg gtc        4538
Ala Ala Asn Asp Ser Ala Leu Val Glu Val Gln Glu Pro Val Leu Val
                1455                1460                1465

acc agc atc aag gtc aat ggc tcc ctt ggg ctg gag ctg cag cag ccg        4586
Thr Ser Ile Lys Val Asn Gly Ser Leu Gly Leu Glu Leu Gln Gln Pro
    1470                1475                1480

tac ctg ttc tct gct gtg ggc cgt ggg cgc ccc gcc agc tac ctg tgg        4634
Tyr Leu Phe Ser Ala Val Gly Arg Gly Arg Pro Ala Ser Tyr Leu Trp
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gat ctg ggg gac ggt ggg tgg ctc gag ggt ccg gag gtc acc cac gct        4682
Asp Leu Gly Asp Gly Gly Trp Leu Glu Gly Pro Glu Val Thr His Ala
                1505                1510                1515

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Tyr Asn Ser Thr Gly Asp Phe Thr Val Arg Val Ala Gly Trp Asn Glu
                1520                1525                1530

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Val Ser Arg Ser Glu Ala Trp Leu Asn Val Thr Val Lys Arg Arg Val
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cgg ggg ctc gtc gtc aat gca agc cgc acg gtg gtg ccc ctg aat ggg        4826
Arg Gly Leu Val Val Asn Ala Ser Arg Thr Val Val Pro Leu Asn Gly
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Ser Val Ser Phe Ser Thr Ser Leu Glu Ala Gly Ser Asp Val Arg Tyr
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tcc tgg gtg ctc tgt gac cgc tgc acg ccc atc cct ggg ggt cct acc        4922
Ser Trp Val Leu Cys Asp Arg Cys Thr Pro Ile Pro Gly Gly Pro Thr
                1585                1590                1595

atc tct tac acc ttc cgc tcc gtg ggc acc ttc aat atc atc gtc acg        4970
Ile Ser Tyr Thr Phe Arg Ser Val Gly Thr Phe Asn Ile Ile Val Thr
                1600                1605                1610

gct gag aac gag gtg ggc tcc gcc cag gac agc atc ttc gtc tat gtc        5018
Ala Glu Asn Glu Val Gly Ser Ala Gln Asp Ser Ile Phe Val Tyr Val
                1615                1620                1625

ctg cag ctc ata gag ggg ctg cag gtg gtg ggc ggt ggc cgc tac ttc        5066
Leu Gln Leu Ile Glu Gly Leu Gln Val Val Gly Gly Gly Arg Tyr Phe
    1630                1635                1640

ccc acc aac cac acg gta cag ctg cag gcc gtg gtt agg gat ggc acc        5114
Pro Thr Asn His Thr Val Gln Leu Gln Ala Val Val Arg Asp Gly Thr
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1645                1650                1655                1660        —

aac gtc tcc tac agc tgg act gcc tgg agg gac agg ggc ccg gcc ctg    5162
Asn Val Ser Tyr Ser Trp Thr Ala Trp Arg Asp Arg Gly Pro Ala Leu
            1665                1670                1675

gcc ggc agc ggc aaa ggc ttc tcg ctc acc gtg ctc gag gcc ggc acc    5210
Ala Gly Ser Gly Lys Gly Phe Ser Leu Thr Val Leu Glu Ala Gly Thr
            1680                1685                1690

tac cat gtg cag ctg cgg gcc acc aac atg ctg ggc agc gcc tgg gcc    5258
Tyr His Val Gln Leu Arg Ala Thr Asn Met Leu Gly Ser Ala Trp Ala
            1695                1700                1705

gac tgc acc atg gac ttc gtg gag cct gtg ggg tgg ctg atg gtg acc    5306
Asp Cys Thr Met Asp Phe Val Glu Pro Val Gly Trp Leu Met Val Thr
            1710                1715                1720

gcc tcc ccg aac cca gct gcc gtc aac aca agc gtc acc ctc agt gcc    5354
Ala Ser Pro Asn Pro Ala Ala Val Asn Thr Ser Val Thr Leu Ser Ala
1725                1730                1735                1740

gag ctg gct ggt ggc agt ggt gtc gta tac act tgg tcc ttg gag gag    5402
Glu Leu Ala Gly Gly Ser Gly Val Val Tyr Thr Trp Ser Leu Glu Glu
            1745                1750                1755

ggg ctg agc tgg gag acc tcc gag cca ttt acc acc cat agc ttc ccc    5450
Gly Leu Ser Trp Glu Thr Ser Glu Pro Phe Thr Thr His Ser Phe Pro
            1760                1765                1770

aca ccc ggc ctg cac ttg gtc acc atg acg gca ggg aac ccg ctg ggc    5498
Thr Pro Gly Leu His Leu Val Thr Met Thr Ala Gly Asn Pro Leu Gly
            1775                1780                1785

tca gcc aac gcc acc gtg gaa gtg gat gtg cag gtg cct gtg agt ggc    5546
Ser Ala Asn Ala Thr Val Glu Val Asp Val Gln Val Pro Val Ser Gly
            1790                1795                1800

ctc agc atc agg gcc agc gag ccc gga ggc agc ttc gtg gcg gcc ggg    5594
Leu Ser Ile Arg Ala Ser Glu Pro Gly Gly Ser Phe Val Ala Ala Gly
1805                1810                1815                1820

tcc tct gtg ccc ttt tgg ggg cag ctg gcc acg ggc acc aat gtg agc    5642
Ser Ser Val Pro Phe Trp Gly Gln Leu Ala Thr Gly Thr Asn Val Ser
            1825                1830                1835

tgg tgc tgg gct gtg ccc ggc ggc agc agc aag cgt ggc cct cat gtc    5690
Trp Cys Trp Ala Val Pro Gly Gly Ser Ser Lys Arg Gly Pro His Val
            1840                1845                1850

acc atg gtc ttc ccg gat gct ggc acc ttc tcc atc cgg ctc aat gcc    5738
Thr Met Val Phe Pro Asp Ala Gly Thr Phe Ser Ile Arg Leu Asn Ala
            1855                1860                1865

tcc aac gca gtc agc tgg gtc tca gcc acg tac aac ctc acg gcg gag    5786
Ser Asn Ala Val Ser Trp Val Ser Ala Thr Tyr Asn Leu Thr Ala Glu
            1870                1875                1880

gag ccc atc gtg ggc ctg gtg ctg tgg gcc agc agc aag gtg gtg gcg    5834
Glu Pro Ile Val Gly Leu Val Leu Trp Ala Ser Ser Lys Val Val Ala
1885                1890                1895                1900

ccc ggg cag ctg gtc cat ttt cag atc ctg ctg gct gcc ggc tca gct    5882
Pro Gly Gln Leu Val His Phe Gln Ile Leu Leu Ala Ala Gly Ser Ala
            1905                1910                1915
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gtc acc ttc cgc ctg cag gtc ggc ggg gcc aac ccc gag gtg ctc ccc        5930
Val Thr Phe Arg Leu Gln Val Gly Gly Ala Asn Pro Glu Val Leu Pro
         1920              1925              1930

ggg ccc cgt ttc tcc cac agc ttc ccc cgc gtc gga gac cac gtg gtg        5978
Gly Pro Arg Phe Ser His Ser Phe Pro Arg Val Gly Asp His Val Val
         1935              1940              1945

agc gtg cgg ggc aaa aac cac gtg agc tgg gcc cag gcg cag gtg cgc        6026
Ser Val Arg Gly Lys Asn His Val Ser Trp Ala Gln Ala Gln Val Arg
         1950              1955              1960

atc gtg gtg ctg gag gcc gtg agt ggg ctg cag atg ccc aac tgc tgc        6074
Ile Val Val Leu Glu Ala Val Ser Gly Leu Gln Met Pro Asn Cys Cys
1965              1970              1975              1980

gag cct ggc atc gcc acg ggc act gag agg aac ttc aca gcc cgc gtg        6122
Glu Pro Gly Ile Ala Thr Gly Thr Glu Arg Asn Phe Thr Ala Arg Val
              1985              1990              1995

cag cgc ggc tct cgg gtc gcc tac gcc tgg tac ttc tcg ctg cag aag        6170
Gln Arg Gly Ser Arg Val Ala Tyr Ala Trp Tyr Phe Ser Leu Gln Lys
              2000              2005              2010

gtc cag ggc gac tcg ctg gtc atc ctg tcg ggc cgc gac gtc acc tac        6218
Val Gln Gly Asp Ser Leu Val Ile Leu Ser Gly Arg Asp Val Thr Tyr
         2015              2020              2025

acg ccc gtg gcc gcg ggg ctg ttg gag atc cag gtg cgc gcc ttc aac        6266
Thr Pro Val Ala Ala Gly Leu Leu Glu Ile Gln Val Arg Ala Phe Asn
         2030              2035              2040

gcc ctg ggc agt gag aac cgc acg ctg gtg ctg gag gtt cag gac gcc        6314
Ala Leu Gly Ser Glu Asn Arg Thr Leu Val Leu Glu Val Gln Asp Ala
2045              2050              2055              2060

gtc cag tat gtg gcc ctg cag agc ggc ccc tgc ttc acc aac cgc tcg        6362
Val Gln Tyr Val Ala Leu Gln Ser Gly Pro Cys Phe Thr Asn Arg Ser
              2065              2070              2075

gcg cag ttt gag gcc gcc acc agc ccc agc ccc cgg cgt gtg gcc tac        6410
Ala Gln Phe Glu Ala Ala Thr Ser Pro Ser Pro Arg Arg Val Ala Tyr
              2080              2085              2090

cac tgg gac ttt ggg gat ggg tcg cca ggg cag gac aca gat gag ccc        6458
His Trp Asp Phe Gly Asp Gly Ser Pro Gly Gln Asp Thr Asp Glu Pro
              2095              2100              2105

agg gcc gag cac tcc tac ctg agg cct ggg gac tac cgc gtg cag gtg        6506
Arg Ala Glu His Ser Tyr Leu Arg Pro Gly Asp Tyr Arg Val Gln Val
         2110              2115              2120

aac gcc tcc aac ctg gtg agc ttc ttc gtg gcg cag gcc acg gtg acc        6554
Asn Ala Ser Asn Leu Val Ser Phe Phe Val Ala Gln Ala Thr Val Thr
2125              2130              2135              2140

gtc cag gtg ctg gcc tgc cgg gag ccg gag gtg gac gtg gtc ctg ccc        6602
Val Gln Val Leu Ala Cys Arg Glu Pro Glu Val Asp Val Val Leu Pro
              2145              2150              2155

ctg cag gtg ctg atg cgg cga tca cag cgc aac tac ttg gag gcc cac        6650
Leu Gln Val Leu Met Arg Arg Ser Gln Arg Asn Tyr Leu Glu Ala His
              2160              2165              2170

gtt gac ctg cgc gac tgc gtc acc tac cag act gag tac cgc tgg gag        6698
Val Asp Leu Arg Asp Cys Val Thr Tyr Gln Thr Glu Tyr Arg Trp Glu
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                2175                        2180                        2185

gtg tat cgc acc gcc agc tgc cag cgg ccg ggg cgc cca gcg cgt gtg     6746
Val Tyr Arg Thr Ala Ser Cys Gln Arg Pro Gly Arg Pro Ala Arg Val
    2190                    2195                    2200

gcc ctg ccc ggc gtg gac gtg agc cgg cct cgg ctg gtg ctg ccg cgg     6794
Ala Leu Pro Gly Val Asp Val Ser Arg Pro Arg Leu Val Leu Pro Arg
2205                    2210                    2215                2220

ctg gcg ctg cct gtg ggg cac tac tgc ttt gtg ttt gtc gtg tca ttt     6842
Leu Ala Leu Pro Val Gly His Tyr Cys Phe Val Phe Val Val Ser Phe
                    2225                    2230                    2235

ggg gac acg cca ctg aca cag agc atc cag gcc aat gtg acg gtg gcc     6890
Gly Asp Thr Pro Leu Thr Gln Ser Ile Gln Ala Asn Val Thr Val Ala
                2240                    2245                    2250

ccc gag cgc ctg gtg ccc atc att gag ggt ggc tca tac cgc gtg tgg     6938
Pro Glu Arg Leu Val Pro Ile Ile Glu Gly Gly Ser Tyr Arg Val Trp
            2255                    2260                    2265

tca gac aca cgg gac ctg gtg ctg gat ggg agc gag tcc tac gac ccc     6986
Ser Asp Thr Arg Asp Leu Val Leu Asp Gly Ser Glu Ser Tyr Asp Pro
        2270                    2275                    2280

aac ctg gag gac ggc gac cag acg ccg ctc agt ttc cac tgg gcc tgt     7034
Asn Leu Glu Asp Gly Asp Gln Thr Pro Leu Ser Phe His Trp Ala Cys
2285                    2290                    2295                2300

gtg gct tcg aca cag agg gag gct ggc ggg tgt gcg ctg aac ttt ggg     7082
Val Ala Ser Thr Gln Arg Glu Ala Gly Gly Cys Ala Leu Asn Phe Gly
                2305                    2310                    2315

ccc cgc ggg agc agc acg gtc acc att cca cgg gag cgg ctg gcg gct     7130
Pro Arg Gly Ser Ser Thr Val Thr Ile Pro Arg Glu Arg Leu Ala Ala
                2320                    2325                    2330

ggc gtg gag tac acc ttc agc ctg acc gtg tgg aag gcc ggc cgc aag     7178
Gly Val Glu Tyr Thr Phe Ser Leu Thr Val Trp Lys Ala Gly Arg Lys
            2335                    2340                    2345

gag gag gcc acc aac cag acg gtg ctg atc cgg agt ggc cgg gtg ccc     7226
Glu Glu Ala Thr Asn Gln Thr Val Leu Ile Arg Ser Gly Arg Val Pro
        2350                    2355                    2360

att gtg tcc ttg gag tgt gtg tcc tgc aag gca cag gcc gtg tac gaa     7274
Ile Val Ser Leu Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu
2365                    2370                    2375                2380

gtg agc cgc agc tcc tac gtg tac ttg gag ggc cgc tgc ctc aat tgc     7322
Val Ser Arg Ser Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys
                    2385                    2390                    2395

agc agc ggc tcc aag cga ggg cgg tgg gct gca cgt acg ttc agc aac     7370
Ser Ser Gly Ser Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn
                2400                    2405                    2410

aag acg ctg gtg ctg gat gag acc acc aca tcc acg ggc agt gca ggc     7418
Lys Thr Leu Val Leu Asp Glu Thr Thr Thr Ser Thr Gly Ser Ala Gly
            2415                    2420                    2425

atg cga ctg gtg ctg cgg cgg ggc gtg ctg cgg gac ggc gag gga tac     7466
Met Arg Leu Val Leu Arg Arg Gly Val Leu Arg Asp Gly Glu Gly Tyr
            2430                    2435                    2440
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acc ttc acg ctc acg gtg ctg ggc cgc tct ggc gag gag gag ggc tgc          7514
Thr Phe Thr Leu Thr Val Leu Gly Arg Ser Gly Glu Glu Glu Gly Cys
2445               2450           2455               2460

gcc tcc atc cgc ctg tcc ccc aac cgc ccg ccg ctg ggg ggc tct tgc          7562
Ala Ser Ile Arg Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys
                   2465           2470               2475

cgc ctc ttc cca ctg ggc gct gtg cac gcc ctc acc acc aag gtg cac          7610
Arg Leu Phe Pro Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His
                   2480           2485           2490

ttc gaa tgc acg ggc tgg cat gac gcg gag gat gct ggc gcc ccg ctg          7658
Phe Glu Cys Thr Gly Trp His Asp Ala Glu Asp Ala Gly Ala Pro Leu
               2495           2500           2505

gtg tac gcc ctg ctg ctg cgg cgc tgt cgc cag ggc cac tgc gag gag          7706
Val Tyr Ala Leu Leu Leu Arg Arg Cys Arg Gln Gly His Cys Glu Glu
           2510           2515           2520

ttc tgt gtc tac aag ggc agc ctc tcc agc tac gga gcc gtg ctg ccc          7754
Phe Cys Val Tyr Lys Gly Ser Leu Ser Ser Tyr Gly Ala Val Leu Pro
2525               2530           2535               2540

ccg ggt ttc agg cca cac ttc gag gtg ggc ctg gcc gtg gtg gtg cag          7802
Pro Gly Phe Arg Pro His Phe Glu Val Gly Leu Ala Val Val Val Gln
                   2545           2550               2555

gac cag ctg gga gcc gct gtg gtc gcc ctc aac agg tct ttg gcc atc          7850
Asp Gln Leu Gly Ala Ala Val Val Ala Leu Asn Arg Ser Leu Ala Ile
               2560           2565           2570

acc ctc cca gag ccc aac ggc agc gca acg ggg ctc aca gtc tgg ctg          7898
Thr Leu Pro Glu Pro Asn Gly Ser Ala Thr Gly Leu Thr Val Trp Leu
           2575           2580           2585

cac ggg ctc acc gct agt gtg ctc cca ggg ctg ctg cgg cag gcc gat          7946
His Gly Leu Thr Ala Ser Val Leu Pro Gly Leu Leu Arg Gln Ala Asp
       2590           2595           2600

ccc cag cac gtc atc gag tac tcg ttg gcc ctg gtc acc gtg ctg aac          7994
Pro Gln His Val Ile Glu Tyr Ser Leu Ala Leu Val Thr Val Leu Asn
2605               2610           2615               2620

gag tac gag cgg gcc ctg gac gtg gcg gca gag ccc aag cac gag cgg          8042
Glu Tyr Glu Arg Ala Leu Asp Val Ala Ala Glu Pro Lys His Glu Arg
               2625           2630           2635

cag cac cga gcc cag ata cgc aag aac atc acg gag act ctg gtg tcc          8090
Gln His Arg Ala Gln Ile Arg Lys Asn Ile Thr Glu Thr Leu Val Ser
           2640           2645           2650

ctg agg gtc cac act gtg gat gac atc cag cag atc gct gct gcg ctg          8138
Leu Arg Val His Thr Val Asp Asp Ile Gln Gln Ile Ala Ala Ala Leu
           2655           2660           2665

gcc cag tgc atg ggg ccc agc agg gag ctc gta tgc cgc tcg tgc ctg          8186
Ala Gln Cys Met Gly Pro Ser Arg Glu Leu Val Cys Arg Ser Cys Leu
       2670           2675           2680

aag cag acg ctg cac aag ctg gag gcc atg atg ctc atc ctg cag gca          8234
Lys Gln Thr Leu His Lys Leu Glu Ala Met Met Leu Ile Leu Gln Ala
2685               2690           2695               2700

gag acc acc gcg ggc acc gtg acg ccc acc gcc atc gga gac agc atc          8282
Glu Thr Thr Ala Gly Thr Val Thr Pro Thr Ala Ile Gly Asp Ser Ile
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                    2705   2710   2715

ctc aac atc aca gga gac ctc atc cac ctg gcc agc tcg gac gtg cgg   8330
Leu Asn Ile Thr Gly Asp Leu Ile His Leu Ala Ser Ser Asp Val Arg
            2720   2725   2730

gca cca cag ccc tca gag ctg gga gcc gag tca cca tct cgg atg gtg   8378
Ala Pro Gln Pro Ser Glu Leu Gly Ala Glu Ser Pro Ser Arg Met Val
            2735   2740   2745

gcg tcc cag gcc tac aac ctg acc tct gcc ctc atg cgc atc ctc atg   8426
Ala Ser Gln Ala Tyr Asn Leu Thr Ser Ala Leu Met Arg Ile Leu Met
            2750   2755   2760

cgc tcc cgc gtg ctc aac gag gag ccc ctg acg ctg gcg ggc gag gag   8474
Arg Ser Arg Val Leu Asn Glu Glu Pro Leu Thr Leu Ala Gly Glu Glu
2765   2770   2775   2780

atc gtg gcc cag ggc aag cgc tcg gac ccg cgg agc ctg ctg tgc tat   8522
Ile Val Ala Gln Gly Lys Arg Ser Asp Pro Arg Ser Leu Leu Cys Tyr
                2785   2790   2795

ggc ggc gcc cca ggg cct ggc tgc cac ttc tcc atc ccc gag gct ttc   8570
Gly Gly Ala Pro Gly Pro Gly Cys His Phe Ser Ile Pro Glu Ala Phe
                2800   2805   2810

agc ggg gcc ctg gcc aac ctc agt gac gtg gtg cag ctc atc ttt ctg   8618
Ser Gly Ala Leu Ala Asn Leu Ser Asp Val Val Gln Leu Ile Phe Leu
            2815   2820   2825

gtg gac tcc aat ccc ttt ccc ttt ggc tat atc agc aac tac acc gtc   8666
Val Asp Ser Asn Pro Phe Pro Phe Gly Tyr Ile Ser Asn Tyr Thr Val
            2830   2835   2840

tcc acc aag gtg gcc tcg atg gca ttc cag aca cag gcc ggc gcc cag   8714
Ser Thr Lys Val Ala Ser Met Ala Phe Gln Thr Gln Ala Gly Ala Gln
2845   2850   2855   2860

atc ccc atc gag cgg ctg gcc tca gag cgc gcc atc acc gtg aag gtg   8762
Ile Pro Ile Glu Arg Leu Ala Ser Glu Arg Ala Ile Thr Val Lys Val
                2865   2870   2875

ccc aac aac tcg gac tgg gct gcc cgg ggc cac cgc agc tcc gcc aac   8810
Pro Asn Asn Ser Asp Trp Ala Ala Arg Gly His Arg Ser Ser Ala Asn
                2880   2885   2890

tcc gcc aac tcc gtt gtg gtc cag ccc cag gcc tcc gtc ggt gct gtg   8858
Ser Ala Asn Ser Val Val Val Gln Pro Gln Ala Ser Val Gly Ala Val
            2895   2900   2905

gtc acc ctg gac agc agc aac cct gcg gcc ggg ctg cat ctg cag ctc   8906
Val Thr Leu Asp Ser Ser Asn Pro Ala Ala Gly Leu His Leu Gln Leu
            2910   2915   2920

aac tat acg ctg ctg gac ggc cac tac ctg tct gag gaa cct gag ccc   8954
Asn Tyr Thr Leu Leu Asp Gly His Tyr Leu Ser Glu Glu Pro Glu Pro
2925   2930   2935   2940

tac ctg gca gtc tac cta cac tcg gag ccc cgg ccc aat gag cac aac   9002
Tyr Leu Ala Val Tyr Leu His Ser Glu Pro Arg Pro Asn Glu His Asn
                2945   2950   2955

tgc tcg gct agc agg agg atc cgc cca gag tca ctc cag ggt gct gac   9050
Cys Ser Ala Ser Arg Arg Ile Arg Pro Glu Ser Leu Gln Gly Ala Asp
                2960   2965   2970

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cac cgg ccc tac acc ttc ttc att tcc ccg ggg agc aga gac cca gcg     9098
His Arg Pro Tyr Thr Phe Phe Ile Ser Pro Gly Ser Arg Asp Pro Ala
        2975                2980                2985

ggg agt tac cat ctg aac ctc tcc agc cac ttc cgc tgg tcg gcg ctg     9146
Gly Ser Tyr His Leu Asn Leu Ser Ser His Phe Arg Trp Ser Ala Leu
        2990                2995                3000

cag gtg tcc gtg ggc ctg tac acg tcc ctg tgc cag tac ttc agc gag     9194
Gln Val Ser Val Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe Ser Glu
3005                3010                3015                3020

gag gac atg gtg tgg cgg aca gag ggg ctg ctg ccc ctg gag gag acc     9242
Glu Asp Met Val Trp Arg Thr Glu Gly Leu Leu Pro Leu Glu Glu Thr
        3025                3030                3035

tcg ccc cgc cag gcc gtc tgc ctc acc cgc cac ctc acc gcc ttc ggc     9290
Ser Pro Arg Gln Ala Val Cys Leu Thr Arg His Leu Thr Ala Phe Gly
        3040                3045                3050

gcc agc ctc ttc gtg ccc cca agc cat gtc cgc ttt gtg ttt cct gag     9338
Ala Ser Leu Phe Val Pro Pro Ser His Val Arg Phe Val Phe Pro Glu
        3055                3060                3065

ccg aca gcg gat gta aac tac atc gtc atg ctg aca tgt gct gtg tgc     9386
Pro Thr Ala Asp Val Asn Tyr Ile Val Met Leu Thr Cys Ala Val Cys
        3070                3075                3080

ctg gtg acc tac atg gtc atg gcc gcc atc ctg cac aag ctg gac cag     9434
Leu Val Thr Tyr Met Val Met Ala Ala Ile Leu His Lys Leu Asp Gln
3085                3090                3095                3100

ttg gat gcc agc cgg ggc cgc gcc atc cct ttc tgt ggg cag cgg ggc     9482
Leu Asp Ala Ser Arg Gly Arg Ala Ile Pro Phe Cys Gly Gln Arg Gly
        3105                3110                3115

cgc ttc aag tac gag atc ctc gtc aag aca ggc tgg ggc cgg ggc tca     9530
Arg Phe Lys Tyr Glu Ile Leu Val Lys Thr Gly Trp Gly Arg Gly Ser
        3120                3125                3130

ggt acc acg gcc cac gtg ggc atc atg ctg tat ggg gtg gac agc cgg     9578
Gly Thr Thr Ala His Val Gly Ile Met Leu Tyr Gly Val Asp Ser Arg
        3135                3140                3145

agc ggc cac cgg cac ctg gac ggc gac aga gcc ttc cac cgc aac agc     9626
Ser Gly His Arg His Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser
        3150                3155                3160

ctg gac atc ttc cgg atc gcc acc ccg cac agc ctg ggt agc gtg tgg     9674
Leu Asp Ile Phe Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp
3165                3170                3175                3180

aag atc cga gtg tgg cac gac aac aaa ggg ctc agc cct gcc tgg ttc     9722
Lys Ile Arg Val Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe
        3185                3190                3195

ctg cag cac gtc atc gtc agg gac ctg cag acg gca cgc agc gcc ttc     9770
Leu Gln His Val Ile Val Arg Asp Leu Gln Thr Ala Arg Ser Ala Phe
        3200                3205                3210

ttc ctg gtc aat gac tgg ctt tcg gtg gag acg gag gcc aac ggg ggc     9818
Phe Leu Val Asn Asp Trp Leu Ser Val Glu Thr Glu Ala Asn Gly Gly
        3215                3220                3225

ctg gtg gag aag gag gtg ctg gcc gcg agc gac gca gcc ctt ttg cgc     9866
Leu Val Glu Lys Glu Val Leu Ala Ala Ser Asp Ala Ala Leu Leu Arg
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                3230                    3235                    3240

    ttc cgg cgc ctg ctg gtg gct gag ctg cag cgt ggc ttc ttt gac aag    9914
    Phe Arg Arg Leu Leu Val Ala Glu Leu Gln Arg Gly Phe Phe Asp Lys
    3245                    3250                    3255            3260

    cac atc tgg ctc tcc ata tgg gac cgg ccg cct cgt agc cgt ttc act    9962
    His Ile Trp Leu Ser Ile Trp Asp Arg Pro Pro Arg Ser Arg Phe Thr
                        3265                    3270            3275

    cgc atc cag agg gcc acc tgc tgc gtt ctc ctc atc tgc ctc ttc ctg    10010
    Arg Ile Gln Arg Ala Thr Cys Cys Val Leu Leu Ile Cys Leu Phe Leu
                    3280                    3285            3290

    ggc gcc aac gcc gtg tgg tac ggg gct gtt ggc gac tct gcc tac agc    10058
    Gly Ala Asn Ala Val Trp Tyr Gly Ala Val Gly Asp Ser Ala Tyr Ser
                3295                    3300            3305

    acg ggg cat gtg tcc agg ctg agc ccg ctg agc gtc gac aca gtc gct    10106
    Thr Gly His Val Ser Arg Leu Ser Pro Leu Ser Val Asp Thr Val Ala
                3310                    3315            3320

    gtt ggc ctg gtg tcc agc gtg gtt gtc tat ccc gtc tac ctg gcc atc    10154
    Val Gly Leu Val Ser Ser Val Val Val Tyr Pro Val Tyr Leu Ala Ile
    3325                    3330                    3335            3340

    ctt ttt ctc ttc cgg atg tcc cgg agc aag gtg gct ggg agc ccg agc    10202
    Leu Phe Leu Phe Arg Met Ser Arg Ser Lys Val Ala Gly Ser Pro Ser
                        3345                    3350            3355

    ccc aca cct gcc ggg cag cag gtg ctg gac atc gac agc tgc ctg gac    10250
    Pro Thr Pro Ala Gly Gln Gln Val Leu Asp Ile Asp Ser Cys Leu Asp
                    3360                    3365            3370

    tcg tcc gtg ctg gac agc tcc ttc ctc acg ttc tca ggc ctc cac gct    10298
    Ser Ser Val Leu Asp Ser Ser Phe Leu Thr Phe Ser Gly Leu His Ala
                    3375                    3380            3385

    gag gcc ttt gtt gga cag atg aag agt gac ttg ttt ctg gat gat tct    10346
    Glu Ala Phe Val Gly Gln Met Lys Ser Asp Leu Phe Leu Asp Asp Ser
                3390                    3395            3400

    aag agt ctg gtg tgc tgg ccc tcc ggc gag gga acg ctc agt tgg ccg    10394
    Lys Ser Leu Val Cys Trp Pro Ser Gly Glu Gly Thr Leu Ser Trp Pro
    3405                    3410                    3415            3420

    gac ctg ctc agt gac ccg tcc att gtg ggt agc aat ctg cgg cag ctg    10442
    Asp Leu Leu Ser Asp Pro Ser Ile Val Gly Ser Asn Leu Arg Gln Leu
                        3425                    3430            3435

    gca cgg ggc cag gcg ggc cat ggg ctg ggc cca gag gag gac ggc ttc    10490
    Ala Arg Gly Gln Ala Gly His Gly Leu Gly Pro Glu Glu Asp Gly Phe
                3440                    3445            3450

    tcc ctg gcc agc ccc tac tcg cct gcc aaa tcc ttc tca gca tca gat    10538
    Ser Leu Ala Ser Pro Tyr Ser Pro Ala Lys Ser Phe Ser Ala Ser Asp
                3455                    3460            3465

    gaa gac ctg atc cag cag gtc ctt gcc gag ggg gtc agc agc cca gcc    10586
    Glu Asp Leu Ile Gln Gln Val Leu Ala Glu Gly Val Ser Ser Pro Ala
                3470                    3475            3480

    cct acc caa gac acc cac atg gaa acg gac ctg ctc agc agc ctg tcc    10634
    Pro Thr Gln Asp Thr His Met Glu Thr Asp Leu Leu Ser Ser Leu Ser
                3485                    3490            3495            3500
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agc act cct ggg gag aag aca gag acg ctg gcg ctg cag agg ctg ggg    10682
Ser Thr Pro Gly Glu Lys Thr Glu Thr Leu Ala Leu Gln Arg Leu Gly
              3505                3510                3515

gag ctg ggg cca ccc agc cca ggc ctg aac tgg gaa cag ccc cag gca    10730
Glu Leu Gly Pro Pro Ser Pro Gly Leu Asn Trp Glu Gln Pro Gln Ala
              3520                3525                3530

gcg agg ctg tcc agg aca gga ctg gtg gag ggt ctg cgg aag cgc ctg    10778
Ala Arg Leu Ser Arg Thr Gly Leu Val Glu Gly Leu Arg Lys Arg Leu
              3535                3540                3545

ctg ccg gcc tgg tgt gcc tcc ctg gcc cac ggg ctc agc ctg ctc ctg    10826
Leu Pro Ala Trp Cys Ala Ser Leu Ala His Gly Leu Ser Leu Leu Leu
              3550                3555                3560

gtg gct gtg gct gtg gct gtc tca ggg tgg gtg ggt gcg agc ttc ccc    10874
Val Ala Val Ala Val Ala Val Ser Gly Trp Val Gly Ala Ser Phe Pro
3565                3570                3575                3580

ccg ggc gtg agt gtt gcg tgg ctc ctg tcc agc agc gcc agc ttc ctg    10922
Pro Gly Val Ser Val Ala Trp Leu Leu Ser Ser Ser Ala Ser Phe Leu
              3585                3590                3595

gcc tca ttc ctc ggc tgg gag cca ctg aag gtc ttg ctg gaa gcc ctg    10970
Ala Ser Phe Leu Gly Trp Glu Pro Leu Lys Val Leu Leu Glu Ala Leu
              3600                3605                3610

tac ttc tca ctg gtg gcc aag cgg ctg cac ccg gat gaa gat gac acc    11018
Tyr Phe Ser Leu Val Ala Lys Arg Leu His Pro Asp Glu Asp Asp Thr
              3615                3620                3625

ctg gta gag agc ccg gct gtg acg cct gtg agc gca cgt gtg ccc cgc    11066
Leu Val Glu Ser Pro Ala Val Thr Pro Val Ser Ala Arg Val Pro Arg
              3630                3635                3640

gta cgg cca ccc cac ggc ttt gca ctc ttc ctg gcc aag gaa gaa gcc    11114
Val Arg Pro Pro His Gly Phe Ala Leu Phe Leu Ala Lys Glu Glu Ala
3645                3650                3655                3660

cgc aag gtc aag agg cta cat ggc atg ctg cgg agc ctc ctg gtg tac    11162
Arg Lys Val Lys Arg Leu His Gly Met Leu Arg Ser Leu Leu Val Tyr
              3665                3670                3675

atg ctt ttt ctg ctg gtg acc ctg ctg gcc agc tat ggg gat gcc tca    11210
Met Leu Phe Leu Leu Val Thr Leu Leu Ala Ser Tyr Gly Asp Ala Ser
              3680                3685                3690

tgc cat ggg cac gcc tac cgt ctg caa agc gcc atc aag cag gag ctg    11258
Cys His Gly His Ala Tyr Arg Leu Gln Ser Ala Ile Lys Gln Glu Leu
              3695                3700                3705

cac agc cgg gcc ttc ctg gcc atc acg cgg tct gag gag ctc tgg cca    11306
His Ser Arg Ala Phe Leu Ala Ile Thr Arg Ser Glu Glu Leu Trp Pro
              3710                3715                3720

tgg atg gcc cac gtg ctg ctg ccc tac gtc cac ggg aac cag tcc agc    11354
Trp Met Ala His Val Leu Leu Pro Tyr Val His Gly Asn Gln Ser Ser
3725                3730                3735                3740

cca gag ctg ggg ccc cca cgg ctg cgg cag gtg cgg ctg cag gaa gca    11402
Pro Glu Leu Gly Pro Pro Arg Leu Arg Gln Val Arg Leu Gln Glu Ala
              3745                3750                3755

ctc tac cca gac cct ccc ggc ccc agg gtc cac acg tgc tcg gcc gca    11450
Leu Tyr Pro Asp Pro Pro Gly Pro Arg Val His Thr Cys Ser Ala Ala
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              3760                    3765                    3770

gga ggc ttc agc acc agc gat tac gac gtt ggc tgg gag agt cct cac      11498
Gly Gly Phe Ser Thr Ser Asp Tyr Asp Val Gly Trp Glu Ser Pro His
        3775                    3780                    3785

aat ggc tcg ggg acg tgg gcc tat tca gcg ccg gat ctg ctg ggg gca      11546
Asn Gly Ser Gly Thr Trp Ala Tyr Ser Ala Pro Asp Leu Leu Gly Ala
        3790                    3795                    3800

tgg tcc tgg ggc tcc tgt gcc gtg tat gac agc ggg ggc tac gtg cag      11594
Trp Ser Trp Gly Ser Cys Ala Val Tyr Asp Ser Gly Gly Tyr Val Gln
3805                    3810                    3815                    3820

gag ctg ggc ctg agc ctg gag gag agc cgc gac cgg ctg cgc ttc ctg      11642
Glu Leu Gly Leu Ser Leu Glu Glu Ser Arg Asp Arg Leu Arg Phe Leu
                3825                    3830                    3835

cag ctg cac aac tgg ctg gac aac agg agc cgc gct gtg ttc ctg gag      11690
Gln Leu His Asn Trp Leu Asp Asn Arg Ser Arg Ala Val Phe Leu Glu
        3840                    3845                    3850

ctc acg cgc tac agc ccg gcc gtg ggg ctg cac gcc gcc gtc acg ctg      11738
Leu Thr Arg Tyr Ser Pro Ala Val Gly Leu His Ala Ala Val Thr Leu
        3855                    3860                    3865

cgc ctc gag ttc ccg gcg gcc ggc cgc gcc ctg gcc gcc ctc agc gtc      11786
Arg Leu Glu Phe Pro Ala Ala Gly Arg Ala Leu Ala Ala Leu Ser Val
        3870                    3875                    3880

cgc ccc ttt gcg ctg cgc cgc ctc agc gcg ggc ctc tcg ctg cct ctg      11834
Arg Pro Phe Ala Leu Arg Arg Leu Ser Ala Gly Leu Ser Leu Pro Leu
3885                    3890                    3895                    3900

ctc acc tcg gtg tgc ctg ctg ctg ttc gcc gtg cac ttc gcc gtg gcc      11882
Leu Thr Ser Val Cys Leu Leu Leu Phe Ala Val His Phe Ala Val Ala
        3905                    3910                    3915

gag gcc cgt act tgg cac agg gaa ggg cgc tgg cgc gtg ctg cgg ctc      11930
Glu Ala Arg Thr Trp His Arg Glu Gly Arg Trp Arg Val Leu Arg Leu
        3920                    3925                    3930

gga gcc tgg gcg cgg tgg ctg ctg gtg gcg ctg acg gcg gcc acg gca      11978
Gly Ala Trp Ala Arg Trp Leu Leu Val Ala Leu Thr Ala Ala Thr Ala
        3935                    3940                    3945

ctg gta cgc ctc gcc cag ctg ggt gcc gct gac cgc cag tgg acc cgt      12026
Leu Val Arg Leu Ala Gln Leu Gly Ala Ala Asp Arg Gln Trp Thr Arg
        3950                    3955                    3960

ttc gtg cgc ggc cgc ccg cgc cgc ttc act agc ttc gac cag gtg gcg      12074
Phe Val Arg Gly Arg Pro Arg Arg Phe Thr Ser Phe Asp Gln Val Ala
3965                    3970                    3975                    3980

cag ctg agc tcc gca gcc cgt ggc ctg gcg gcc tcg ctg ctc ttc ctg      12122
Gln Leu Ser Ser Ala Ala Arg Gly Leu Ala Ala Ser Leu Leu Phe Leu
                3985                    3990                    3995

ctt ttg gtc aag gct gcc cag cag cta cgc ttc gtg cgc cag tgg tcc      12170
Leu Leu Val Lys Ala Ala Gln Gln Leu Arg Phe Val Arg Gln Trp Ser
        4000                    4005                    4010

gtc ttt ggc aag aca tta tgc cga gct ctg cca gag ctc ctg ggg gtc      12218
Val Phe Gly Lys Thr Leu Cys Arg Ala Leu Pro Glu Leu Leu Gly Val
        4015                    4020                    4025
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acc ttg ggc ctg gtg gtg ctc ggg gta gcc tac gcc cag ctg gcc atc    12266
Thr Leu Gly Leu Val Val Leu Gly Val Ala Tyr Ala Gln Leu Ala Ile
    4030              4035              4040

ctg ctc gtg tct tcc tgt gtg gac tcc ctc tgg agc gtg gcc cag gcc    12314
Leu Leu Val Ser Ser Cys Val Asp Ser Leu Trp Ser Val Ala Gln Ala
4045              4050              4055              4060

ctg ttg gtg ctg tgc cct ggg act ggg ctc tct acc ctg tgt cct gcc    12362
Leu Leu Val Leu Cys Pro Gly Thr Gly Leu Ser Thr Leu Cys Pro Ala
                4065              4070              4075

gag tcc tgg cac ctg tca ccc ctg ctg tgt gtg ggg ctc tgg gca ctg    12410
Glu Ser Trp His Leu Ser Pro Leu Leu Cys Val Gly Leu Trp Ala Leu
            4080              4085              4090

cgg ctg tgg ggc gcc cta cgg ctg ggg gct gtt att ctc cgc tgg cgc    12458
Arg Leu Trp Gly Ala Leu Arg Leu Gly Ala Val Ile Leu Arg Trp Arg
            4095              4100              4105

tac cac gcc ttg cgt gga gag ctg tac cgg ccg gcc tgg gag ccc cag    12506
Tyr His Ala Leu Arg Gly Glu Leu Tyr Arg Pro Ala Trp Glu Pro Gln
    4110              4115              4120

gac tac gag atg gtg gag ttg ttc ctg cgc agg ctg cgc ctc tgg atg    12554
Asp Tyr Glu Met Val Glu Leu Phe Leu Arg Arg Leu Arg Leu Trp Met
4125              4130              4135              4140

ggc ctc agc aag gtc aag gag ttc cgc cac aaa gtc cgc ttt gaa ggg    12602
Gly Leu Ser Lys Val Lys Glu Phe Arg His Lys Val Arg Phe Glu Gly
                4145              4150              4155

atg gag ccg ctg ccc tct cgc tcc tcc agg ggc tcc aag gta tcc ccg    12650
Met Glu Pro Leu Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro
            4160              4165              4170

gat gtg ccc cca ccc agc gct ggc tcc gat gcc tcg cac ccc tcc acc    12698
Asp Val Pro Pro Pro Ser Ala Gly Ser Asp Ala Ser His Pro Ser Thr
            4175              4180              4185

tcc tcc agc cag ctg gat ggg ctg agc gtg agc ctg ggc cgg ctg ggg    12746
Ser Ser Ser Gln Leu Asp Gly Leu Ser Val Ser Leu Gly Arg Leu Gly
    4190              4195              4200

aca agg tgt gag cct gag ccc tcc cgc ctc caa gcc gtg ttc gag gcc    12794
Thr Arg Cys Glu Pro Glu Pro Ser Arg Leu Gln Ala Val Phe Glu Ala
4205              4210              4215              4220

ctg ctc acc cag ttt gac cga ctc aac cag gcc aca gag gac gtc tac    12842
Leu Leu Thr Gln Phe Asp Arg Leu Asn Gln Ala Thr Glu Asp Val Tyr
                4225              4230              4235

cag ctg gag cag cag ctg cac agc ctg caa ggc cgc agg agc agc cgg    12890
Gln Leu Glu Gln Gln Leu His Ser Leu Gln Gly Arg Arg Ser Ser Arg
            4240              4245              4250

gcg ccc gcc gga tct tcc cgt ggc cca tcc ccg ggc ctg cgg cca gca    12938
Ala Pro Ala Gly Ser Ser Arg Gly Pro Ser Pro Gly Leu Arg Pro Ala
            4255              4260              4265

ctg ccc agc cgc ctt gcc cgg gcc agt cgg ggt gtg gac ctg gcc act    12986
Leu Pro Ser Arg Leu Ala Arg Ala Ser Arg Gly Val Asp Leu Ala Thr
    4270              4275              4280

ggc ccc agc agg aca ccc ctt cgg gcc aag aac aag gtc cac ccc agc    13034
Gly Pro Ser Arg Thr Pro Leu Arg Ala Lys Asn Lys Val His Pro Ser
```

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4285            4290            4295            4300            —
```

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agc act tagtcctcct tcctggcggg ggtgggccgt ggagtcggag tggacaccgc    13090
Ser Thr
```

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tcagtattac tttctgccgc tgtcaaggcc gagggccagg cagaatggct gcacgtaggt    13150
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caaggccctc ggagctggct gtgcctgctt ctgtgtacca cttctgtggg catggccgct    13990
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gtctgactgc                                                          14060
```

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        <211> 4302
        <212> PRT
        <213> Homo sapiens

        <400> 2
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1               5                   10                  15
Leu Trp Leu Gly Ala Leu Ala Gly Gly Pro Gly Arg Gly Cys Gly Pro
            20                  25                  30
Cys Glu Pro Pro Cys Leu Cys Gly Pro Ala Pro Gly Ala Ala Cys Arg
        35                  40                  45
Val Asn Cys Ser Gly Arg Gly Leu Arg Thr Leu Gly Pro Ala Leu Arg
    50                  55                  60
Ile Pro Ala Asp Ala Thr Ala Leu Asp Val Ser His Asn Leu Leu Arg
65                  70                  75                  80
Ala Leu Asp Val Gly Leu Leu Ala Asn Leu Ser Ala Leu Ala Glu Leu
                85                  90                  95
Asp Ile Ser Asn Asn Lys Ile Ser Thr Leu Glu Glu Gly Ile Phe Ala
            100                 105                 110
Asn Leu Phe Asn Leu Ser Glu Ile Asn Leu Ser Gly Asn Pro Phe Glu
        115                 120                 125
Cys Asp Cys Gly Leu Ala Trp Leu Pro Arg Trp Ala Glu Glu Gln Gln
    130                 135                 140
Val Arg Val Val Gln Pro Glu Ala Ala Thr Cys Ala Gly Pro Gly Ser
145                 150                 155                 160
Leu Ala Gly Gln Pro Leu Leu Gly Ile Pro Leu Leu Asp Ser Gly Cys
                165                 170                 175
Gly Glu Glu Tyr Val Ala Cys Leu Pro Asp Asn Ser Ser Gly Thr Val
            180                 185                 190
Ala Ala Val Ser Phe Ser Ala Ala His Glu Gly Leu Leu Gln Pro Glu
        195                 200                 205
Ala Cys Ser Ala Phe Cys Phe Ser Thr Gly Gln Gly Leu Ala Ala Leu
    210                 215                 220
Ser Glu Gln Gly Trp Cys Leu Cys Gly Ala Ala Gln Pro Ser Ser Ala
225                 230                 235                 240
Ser Phe Ala Cys Leu Ser Leu Cys Ser Gly Pro Pro Pro Pro Ala
                245                 250                 255
Pro Thr Cys Arg Gly Pro Thr Leu Leu Gln His Val Phe Pro Ala Ser
            260                 265                 270
Pro Gly Ala Thr Leu Val Gly Pro His Gly Pro Leu Ala Ser Gly Gln
            275                 280                 285
```

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Leu Ala Ala Phe His Ile Ala Ala Pro Leu Pro Val Thr Ala Thr Arg
    290                 295                 300
Trp Asp Phe Gly Asp Gly Ser Ala Glu Val Asp Ala Ala Gly Pro Ala
305                 310                 315                 320
Ala Ser His Arg Tyr Val Leu Pro Gly Arg Tyr His Val Thr Ala Val
            325                 330                 335
Leu Ala Leu Gly Ala Gly Ser Ala Leu Leu Gly Thr Asp Val Gln Val
            340                 345                 350
Glu Ala Ala Pro Ala Ala Leu Glu Leu Val Cys Pro Ser Ser Val Gln
        355                 360                 365
Ser Asp Glu Ser Leu Asp Leu Ser Ile Gln Asn Arg Gly Gly Ser Gly
    370                 375                 380
Leu Glu Ala Ala Tyr Ser Ile Val Ala Leu Gly Glu Glu Pro Ala Arg
385                 390                 395                 400
Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile Phe Pro Gly Asn
                405                 410                 415
Gly His Cys Tyr Arg Leu Val Val Glu Lys Ala Ala Trp Leu Gln Ala
            420                 425                 430
Gln Glu Gln Cys Gln Ala Trp Ala Gly Ala Ala Leu Ala Met Val Asp
        435                 440                 445
Ser Pro Ala Val Gln Arg Phe Leu Val Ser Arg Val Thr Arg Ser Leu
    450                 455                 460
Asp Val Trp Ile Gly Phe Ser Thr Val Gln Gly Val Glu Val Gly Pro
465                 470                 475                 480
Ala Pro Gln Gly Glu Ala Phe Ser Leu Glu Ser Cys Gln Asn Trp Leu
                485                 490                 495
Pro Gly Glu Pro His Pro Ala Thr Ala Glu His Cys Val Arg Leu Gly
            500                 505                 510
Pro Thr Gly Trp Cys Asn Thr Asp Leu Cys Ser Ala Pro His Ser Tyr
        515                 520                 525
Val Cys Glu Leu Gln Pro Gly Gly Pro Val Gln Asp Ala Glu Asn Leu
    530                 535                 540
Leu Val Gly Ala Pro Ser Gly Asp Leu Gln Gly Pro Leu Thr Pro Leu
545                 550                 555                 560
Ala Gln Gln Asp Gly Leu Ser Ala Pro His Glu Pro Val Glu Val Met
                565                 570                 575
Val Phe Pro Gly Leu Arg Leu Ser Arg Glu Ala Phe Leu Thr Thr Ala
            580                 585                 590
Glu Phe Gly Thr Gln Glu Leu Arg Arg Pro Ala Gln Leu Arg Leu Gln
        595                 600                 605
Val Tyr Arg Leu Leu Ser Thr Ala Gly Thr Pro Glu Asn Gly Ser Glu
    610                 615                 620
Pro Glu Ser Arg Ser Pro Asp Asn Arg Thr Gln Leu Ala Pro Ala Cys
625                 630                 635                 640
Met Pro Gly Gly Arg Trp Cys Pro Gly Ala Asn Ile Cys Leu Pro Leu
                645                 650                 655
Asp Ala Ser Cys His Pro Gln Ala Cys Ala Asn Gly Cys Thr Ser Gly
            660                 665                 670
Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg Glu Phe Leu Phe
    675                 680                 685
Ser Val Ala Ala Gly Pro Pro Ala Gln Tyr Ser Val Thr Leu His Gly
    690                 695                 700
Gln Asp Val Leu Met Leu Pro Gly Asp Leu Val Gly Leu Gln His Asp
705                 710                 715                 720
Ala Gly Pro Gly Ala Leu Leu His Cys Ser Pro Ala Pro Gly His Pro
                725                 730                 735
Gly Pro Gln Ala Pro Tyr Leu Ser Ala Asn Ala Ser Ser Trp Leu Pro
        740                 745                 750
His Leu Pro Ala Gln Leu Glu Gly Thr Trp Ala Cys Pro Ala Cys Ala
    755                 760                 765
Leu Arg Leu Leu Ala Ala Thr Glu Gln Leu Thr Val Leu Leu Gly Leu
    770                 775                 780
Arg Pro Asn Pro Gly Leu Arg Met Pro Gly Arg Tyr Glu Val Arg Ala
785                 790                 795                 800
Glu Val Gly Asn Gly Val Ser Arg His Asn Leu Ser Cys Ser Phe Asp
                805                 810                 815
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Val Val Ser Pro Val Ala Gly Leu Arg Val Ile Tyr Pro Ala Pro Arg
        820                 825                 830
Asp Gly Arg Leu Tyr Val Pro Thr Asn Gly Ser Ala Leu Val Leu Gln
        835                 840                 845
Val Asp Ser Gly Ala Asn Ala Thr Ala Thr Ala Arg Trp Pro Gly Gly
    850             855                 860
Ser Val Ser Ala Arg Phe Glu Asn Val Cys Pro Ala Leu Val Ala Thr
865             870                 875                     880
Phe Val Pro Gly Cys Pro Trp Glu Thr Asn Asp Thr Leu Phe Ser Val
                885             890                 895
Val Ala Leu Pro Trp Leu Ser Glu Gly Glu His Val Val Asp Val Val
            900             905                 910
Val Glu Asn Ser Ala Ser Arg Ala Asn Leu Ser Leu Arg Val Thr Ala
        915             920                 925
Glu Glu Pro Ile Cys Gly Leu Arg Ala Thr Pro Ser Pro Glu Ala Arg
    930             935                 940
Val Leu Gln Gly Val Leu Val Arg Tyr Ser Pro Val Val Glu Ala Gly
945             950                 955                     960
Ser Asp Met Val Phe Arg Trp Thr Ile Asn Asp Lys Gln Ser Leu Thr
            965                 970                 975
Phe Gln Asn Val Val Phe Asn Val Ile Tyr Gln Ser Ala Ala Val Phe
            980                 985                 990
Lys Leu Ser Leu Thr Ala Ser Asn His Val Ser Asn Val Thr Val Asn
        995                 1000                1005
Tyr Asn Val Thr Val Glu Arg Met Asn Arg Met Gln Gly Leu Gln Val
    1010                1015                1020
Ser Thr Val Pro Ala Val Leu Ser Pro Asn Ala Thr Leu Ala Leu Thr
1025                1030                1035                1040
Ala Gly Val Leu Val Asp Ser Ala Val Glu Val Ala Phe Leu Trp Asn
                1045                1050                1055
Phe Gly Asp Gly Glu Gln Ala Leu His Gln Phe Gln Pro Pro Tyr Asn
            1060                1065                1070
Glu Ser Phe Pro Val Pro Asp Pro Ser Val Ala Gln Val Leu Val Glu
        1075                1080                1085
His Asn Val Met His Thr Tyr Ala Ala Pro Gly Glu Tyr Leu Leu Thr
    1090                1095                1100
Val Leu Ala Ser Asn Ala Phe Glu Asn Leu Thr Gln Gln Val Pro Val
1105                1110                1115                1120
Ser Val Arg Ala Ser Leu Pro Ser Val Ala Val Gly Val Ser Asp Gly
                1125                1130                1135
Val Leu Val Ala Gly Arg Pro Val Thr Phe Tyr Pro His Pro Leu Pro
        1140                1145                1150
Ser Pro Gly Gly Val Leu Tyr Thr Trp Asp Phe Gly Asp Gly Ser Pro
        1155                1160                1165
Val Leu Thr Gln Ser Gln Pro Ala Ala Asn His Thr Tyr Ala Ser Arg
    1170                1175                1180
Gly Thr Tyr His Val Arg Leu Glu Val Asn Asn Thr Val Ser Gly Ala
1185                1190                1195                1200
Ala Ala Gln Ala Asp Val Arg Val Phe Glu Glu Leu Arg Gly Leu Ser
                1205                1210                1215
Val Asp Met Ser Leu Ala Val Glu Gln Gly Ala Pro Val Val Val Ser
            1220                1225                1230
Ala Ala Val Gln Thr Gly Asp Asn Ile Thr Trp Thr Phe Asp Met Gly
        1235                1240                1245
Asp Gly Thr Val Leu Ser Gly Pro Glu Ala Thr Val Glu His Val Tyr
    1250                1255                1260
Leu Arg Ala Gln Asn Cys Thr Val Thr Val Gly Ala Ala Ser Pro Ala
1265                1270                1275                1280
Gly His Leu Ala Arg Ser Leu His Val Leu Val Phe Val Leu Glu Val
                1285                1290                1295
Leu Arg Val Glu Pro Ala Ala Cys Ile Pro Thr Gln Pro Asp Ala Arg
            1300                1305                1310
Leu Thr Ala Tyr Val Thr Gly Asn Pro Ala His Tyr Leu Phe Asp Trp
        1315                1320                1325
Thr Phe Gly Asp Gly Ser Ser Asn Thr Thr Val Arg Gly Cys Pro Thr
    1330                1335                1340
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Val Thr His Asn Phe Thr Arg Ser Gly Thr Phe Pro Leu Ala Leu Val
1345   1350   1355   1360
Leu Ser Ser Arg Val Asn Arg Ala His Tyr Phe Thr Ser Ile Cys Val
                1365   1370   1375
Glu Pro Glu Val Gly Asn Val Thr Leu Gln Pro Glu Arg Gln Phe Val
            1380   1385   1390
Gln Leu Gly Asp Glu Ala Trp Leu Val Ala Cys Ala Trp Pro Pro Phe
        1395   1400   1405
Pro Tyr Arg Tyr Thr Trp Asp Phe Gly Thr Glu Glu Ala Ala Pro Thr
    1410   1415   1420
Arg Ala Arg Gly Pro Glu Val Thr Phe Ile Tyr Arg Asp Pro Gly Ser
1425   1430   1435   1440
Tyr Leu Val Thr Val Thr Ala Ser Asn Asn Ile Ser Ala Ala Asn Asp
                1445   1450   1455
Ser Ala Leu Val Glu Val Gln Glu Pro Val Leu Val Thr Ser Ile Lys
        1460   1465   1470
Val Asn Gly Ser Leu Gly Leu Glu Leu Gln Gln Pro Tyr Leu Phe Ser
    1475   1480   1485
Ala Val Gly Arg Gly Arg Pro Ala Ser Tyr Leu Trp Asp Leu Gly Asp
    1490   1495   1500
Gly Gly Trp Leu Glu Gly Pro Glu Val Thr His Ala Tyr Asn Ser Thr
·1505   1510   1515   1520
Gly Asp Phe Thr Val Arg Val Ala Gly Trp Asn Glu Val Ser Arg Ser
                1525   1530   1535
Glu Ala Trp Leu Asn Val Thr Val Lys Arg Arg Val Arg Gly Leu Val
        1540   1545   1550
Val Asn Ala Ser Arg Thr Val Val Pro Leu Asn Gly Ser Val Ser Phe
    1555   1560   1565
Ser Thr Ser Leu Glu Ala Gly Ser Asp Val Arg Tyr Ser Trp Val Leu
    1570   1575   1580
Cys Asp Arg Cys Thr Pro Ile Pro Gly Gly Pro Thr Ile Ser Tyr Thr
1585   1590   1595   1600
Phe Arg Ser Val Gly Thr Phe Asn Ile Ile Val Thr Ala Glu Asn Glu
                1605   1610   1615
Val Gly Ser Ala Gln Asp Ser Ile Phe Val Tyr Val Leu Gln Leu Ile
            1620   1625   1630
Glu Gly Leu Gln Val Val Gly Gly Gly Arg Tyr Phe Pro Thr Asn His
        1635   1640   1645
Thr Val Gln Leu Gln Ala Val Val Arg Asp Gly Thr Asn Val Ser Tyr
    1650   1655   1660
Ser Trp Thr Ala Trp Arg Asp Arg Gly Pro Ala Leu Ala Gly Ser Gly
.1665   1670   1675   1680
Lys Gly Phe Ser Leu Thr Val Leu Glu Ala Gly Thr Tyr His Val Gln
                1685   1690   1695
Leu Arg Ala Thr Asn Met Leu Gly Ser Ala Trp Ala Asp Cys Thr Met
        1700   1705   1710
Asp Phe Val Glu Pro Val Gly Trp Leu Met Val Thr Ala Ser Pro Asn
    1715   1720   1725
Pro Ala Ala Val Asn Thr Ser Val Thr Leu Ser Ala Glu Leu Ala Gly
    1730   1735   1740
Gly Ser Gly Val Val Tyr Thr Trp Ser Leu Glu Glu Gly Leu Ser Trp
1745   1750   1755   1760
Glu Thr Ser Glu Pro Phe Thr Thr His Ser Phe Pro Thr Pro Gly Leu
                1765   1770   1775
His Leu Val Thr Met Thr Ala Gly Asn Pro Leu Gly Ser Ala Asn Ala
            1780   1785   1790
Thr Val Glu Val Asp Val Gln Val Pro Val Ser Gly Leu Ser Ile Arg
        1795   1800   1805
Ala Ser Glu Pro Gly Gly Ser Phe Val Ala Ala Gly Ser Ser Val Pro
    1810   1815   1820
Phe Trp Gly Gln Leu Ala Thr Gly Thr Asn Val Ser Trp Cys Trp Ala
1825   1830   1835   1840
Val Pro Gly Gly Ser Ser Lys Arg Gly Pro His Val Thr Met Val Phe
            1845   1850   1855
Pro Asp Ala Gly Thr Phe Ser Ile Arg Leu Asn Ala Ser Asn Ala Val
            1860   1865   1870

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Ser Trp Val Ser Ala Thr Tyr Asn Leu Thr Ala Glu Glu Pro Ile Val
    1875                1880                1885
Gly Leu Val Leu Trp Ala Ser Ser Lys Val Val Ala Pro Gly Gln Leu
    1890                1895                1900
Val His Phe Gln Ile Leu Leu Ala Ala Gly Ser Ala Val Thr Phe Arg
1905                1910                1915                1920
Leu Gln Val Gly Gly Ala Asn Pro Glu Val Leu Pro Gly Pro Arg Phe
                1925                1930                1935
Ser His Ser Phe Pro Arg Val Gly Asp His Val Val Ser Val Arg Gly
            1940                1945                1950
Lys Asn His Val Ser Trp Ala Gln Ala Gln Val Arg Ile Val Val Leu
    1955                1960                1965
Glu Ala Val Ser Gly Leu Gln Met Pro Asn Cys Cys Glu Pro Gly Ile
    1970                1975                1980
Ala Thr Gly Thr Glu Arg Asn Phe Thr Ala Arg Val Gln Arg Gly Ser
1985                1990                1995                2000
Arg Val Ala Tyr Ala Trp Tyr Phe Ser Leu Gln Lys Val Gln Gly Asp
                2005                2010                2015
Ser Leu Val Ile Leu Ser Gly Arg Asp Val Thr Tyr Thr Pro Val Ala
                2020                2025                2030
Ala Gly Leu Leu Glu Ile Gln Val Arg Ala Phe Asn Ala Leu Gly Ser
            2035                2040                2045
Glu Asn Arg Thr Leu Val Leu Glu Val Gln Asp Ala Val Gln Tyr Val
    2050                2055                2060
Ala Leu Gln Ser Gly Pro Cys Phe Thr Asn Arg Ser Ala Gln Phe Glu
2065                2070                2075                2080
Ala Ala Thr Ser Pro Ser Pro Arg Arg Val Ala Tyr His Trp Asp Phe
            2085                2090                2095
Gly Asp Gly Ser Pro Gly Gln Asp Thr Asp Glu Pro Arg Ala Glu His
            2100                2105                2110
Ser Tyr Leu Arg Pro Gly Asp Tyr Arg Val Gln Val Asn Ala Ser Asn
    2115                2120                2125
Leu Val Ser Phe Phe Val Ala Gln Ala Thr Val Thr Val Gln Val Leu
    2130                2135                2140
Ala Cys Arg Glu Pro Glu Val Asp Val Val Leu Pro Leu Gln Val Leu
2145                2150                2155                2160
Met Arg Arg Ser Gln Arg Asn Tyr Leu Glu Ala His Val Asp Leu Arg
            2165                2170                2175
Asp Cys Val Thr Tyr Gln Thr Glu Tyr Arg Trp Glu Val Tyr Arg Thr
    2180                2185                2190
Ala Ser Cys Gln Arg Pro Gly Arg Pro Ala Arg Val Ala Leu Pro Gly
    2195                2200                2205
Val Asp Val Ser Arg Pro Arg Leu Val Leu Pro Arg Leu Ala Leu Pro
    2210                2215                2220
Val Gly His Tyr Cys Phe Val Phe Val Val Ser Phe Gly Asp Thr Pro
2225                2230                2235                2240
Leu Thr Gln Ser Ile Gln Ala Asn Val Thr Val Ala Pro Glu Arg Leu
            2245                2250                2255
Val Pro Ile Ile Glu Gly Gly Ser Tyr Arg Val Trp Ser Asp Thr Arg
            2260                2265                2270
Asp Leu Val Leu Asp Gly Ser Glu Ser Tyr Asp Pro Asn Leu Glu Asp
    2275                2280                2285
Gly Asp Gln Thr Pro Leu Ser Phe His Trp Ala Cys Val Ala Ser Thr
    2290                2295                2300
Gln Arg Glu Ala Gly Gly Cys Ala Leu Asn Phe Gly Pro Arg Gly Ser
2305                2310                2315                2320
Ser Thr Val Thr Ile Pro Arg Glu Arg Leu Ala Ala Gly Val Glu Tyr
                2325                2330                2335
Thr Phe Ser Leu Thr Val Trp Lys Ala Gly Arg Lys Glu Glu Ala Thr
    2340                2345                2350
Asn Gln Thr Val Leu Ile Arg Ser Gly Arg Val Pro Ile Val Ser Leu
    2355                2360                2365
Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu Val Ser Arg Ser
    2370                2375                2380
Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly Ser
2385                2390                2395                2400
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Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu Val
          2405                2410                2415
Leu Asp Glu Thr Thr Thr Ser Thr Gly Ser Ala Gly Met Arg Leu Val
          2420                2425                2430
Leu Arg Arg Gly Val Leu Arg Asp Gly Glu Gly Tyr Thr Phe Thr Leu
          2435                2440                2445
Thr Val Leu Gly Arg Ser Gly Glu Glu Glu Gly Cys Ala Ser Ile Arg
          2450                2455                2460
Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys Arg Leu Phe Pro
2465                2470                2475                2480
Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His Phe Glu Cys Thr
          2485                2490                2495
Gly Trp His Asp Ala Glu Asp Ala Gly Ala Pro Leu Val Tyr Ala Leu
          2500                2505                2510
Leu Leu Arg Arg Cys Arg Gln Gly His Cys Glu Glu Phe Cys Val Tyr
          2515                2520                2525
Lys Gly Ser Leu Ser Ser Tyr Gly Ala Val Leu Pro Pro Gly Phe Arg
          2530                2535                2540
Pro His Phe Glu Val Gly Leu Ala Val Val Val Gln Asp Gln Leu Gly
2545                2550                2555                2560
Ala Ala Val Val Ala Leu Asn Arg Ser Leu Ala Ile Thr Leu Pro Glu
          2565                2570                2575
Pro Asn Gly Ser Ala Thr Gly Leu Thr Val Trp Leu His Gly Leu Thr
          2580                2585                2590
Ala Ser Val Leu Pro Gly Leu Leu Arg Gln Ala Asp Pro Gln His Val
          2595                2600                2605
Ile Glu Tyr Ser Leu Ala Leu Val Thr Val Leu Asn Glu Tyr Glu Arg
          2610                2615                2620
Ala Leu Asp Val Ala Ala Glu Pro Lys His Glu Arg Gln His Arg Ala
2625                2630                2635                2640
Gln Ile Arg Lys Asn Ile Thr Glu Thr Leu Val Ser Leu Arg Val His
          2645                2650                2655
Thr Val Asp Asp Ile Gln Gln Ile Ala Ala Ala Leu Ala Gln Cys Met
          2660                2665                2670
Gly Pro Ser Arg Glu Leu Val Cys Arg Ser Cys Leu Lys Gln Thr Leu
          2675                2680                2685
His Lys Leu Glu Ala Met Met Leu Ile Leu Gln Ala Glu Thr Thr Ala
          2690                2695                2700
Gly Thr Val Thr Pro Thr Ala Ile Gly Asp Ser Ile Leu Asn Ile Thr
2705                2710                2715                2720
Gly Asp Leu Ile His Leu Ala Ser Ser Asp Val Arg Ala Pro Gln Pro
          2725                2730                2735
Ser Glu Leu Gly Ala Glu Ser Pro Ser Arg Met Val Ala Ser Gln Ala
          2740                2745                2750
Tyr Asn Leu Thr Ser Ala Leu Met Arg Ile Leu Met Arg Ser Arg Val
          2755                2760                2765
Leu Asn Glu Glu Pro Leu Thr Leu Ala Gly Glu Glu Ile Val Ala Gln
          2770                2775                2780
Gly Lys Arg Ser Asp Pro Arg Ser Leu Leu Cys Tyr Gly Gly Ala Pro
2785                2790                2795                2800
Gly Pro Gly Cys His Phe Ser Ile Pro Glu Ala Phe Ser Gly Ala Leu
          2805                2810                2815
Ala Asn Leu Ser Asp Val Val Gln Leu Ile Phe Leu Val Asp Ser Asn
          2820                2825                2830
Pro Phe Pro Phe Gly Tyr Ile Ser Asn Tyr Thr Val Ser Thr Lys Val
          2835                2840                2845
Ala Ser Met Ala Phe Gln Thr Gln Ala Gly Ala Gln Ile Pro Ile Glu
          2850                2855                2860
Arg Leu Ala Ser Glu Arg Ala Ile Thr Val Lys Val Pro Asn Asn Ser
2865                2870                2875                2880
Asp Trp Ala Ala Arg Gly His Arg Ser Ser Ala Asn Ser Ala Asn Ser
          2885                2890                2895
Val Val Val Gln Pro Gln Ala Ser Val Gly Ala Val Val Thr Leu Asp
          2900                2905                2910
Ser Ser Asn Pro Ala Ala Gly Leu His Leu Gln Leu Asn Tyr Thr Leu
          2915                2920                2925
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Leu Asp Gly His Tyr Leu Ser Glu Glu Pro Glu Pro Tyr Leu Ala Val
    2930                2935                2940
Tyr Leu His Ser Glu Pro Arg Pro Asn Glu His Asn Cys Ser Ala Ser
2945                2950                2955                2960
Arg Arg Ile Arg Pro Glu Ser Leu Gln Gly Ala Asp His Arg Pro Tyr
                2965                2970                2975
Thr Phe Phe Ile Ser Pro Gly Ser Arg Asp Pro Ala Gly Ser Tyr His
            2980                2985                2990
Leu Asn Leu Ser Ser His Phe Arg Trp Ser Ala Leu Gln Val Ser Val
        2995                3000                3005
Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe Ser Glu Glu Asp Met Val
    3010                3015                3020
Trp Arg Thr Glu Gly Leu Leu Pro Leu Glu Glu Thr Ser Pro Arg Gln
3025                3030                3035                3040
Ala Val Cys Leu Thr Arg His Leu Thr Ala Phe Gly Ala Ser Leu Phe
                3045                3050                3055
Val Pro Pro Ser His Val Arg Phe Val Phe Pro Glu Pro Thr Ala Asp
            3060                3065                3070
Val Asn Tyr Ile Val Met Leu Thr Cys Ala Val Cys Leu Val Thr Tyr
        3075                3080                3085
Met Val Met Ala Ala Ile Leu His Lys Leu Asp Gln Leu Asp Ala Ser
    3090                3095                3100
Arg Gly Arg Ala Ile Pro Phe Cys Gly Gln Arg Gly Arg Phe Lys Tyr
3105                3110                3115                3120
Glu Ile Leu Val Lys Thr Gly Trp Gly Arg Gly Ser Gly Thr Thr Ala
            3125                3130                3135
His Val Gly Ile Met Leu Tyr Gly Val Asp Ser Arg Ser Gly His Arg
        3140                3145                3150
His Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser Leu Asp Ile Phe
    3155                3160                3165
Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp Lys Ile Arg Val
    3170                3175                3180
Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe Leu Gln His Val
3185                3190                3195                3200
Ile Val Arg Asp Leu Gln Thr Ala Arg Ser Ala Phe Phe Leu Val Asn
            3205                3210                3215
Asp Trp Leu Ser Val Glu Thr Glu Ala Asn Gly Gly Leu Val Glu Lys
        3220                3225                3230
Glu Val Leu Ala Ala Ser Asp Ala Ala Leu Leu Arg Phe Arg Arg Leu
    3235                3240                3245
Leu Val Ala Glu Leu Gln Arg Gly Phe Phe Asp Lys His Ile Trp Leu
    3250                3255                3260
Ser Ile Trp Asp Arg Pro Pro Arg Ser Arg Phe Thr Arg Ile Gln Arg
3265                3270                3275                3280
Ala Thr Cys Cys Val Leu Leu Ile Cys Leu Phe Leu Gly Ala Asn Ala
            3285                3290                3295
Val Trp Tyr Gly Ala Val Gly Asp Ser Ala Tyr Ser Thr Gly His Val
        3300                3305                3310
Ser Arg Leu Ser Pro Leu Ser Val Asp Thr Val Ala Val Gly Leu Val
    3315                3320                3325
Ser Ser Val Val Val Tyr Pro Val Tyr Leu Ala Ile Leu Phe Leu Phe
    3330                3335                3340
Arg Met Ser Arg Ser Lys Val Ala Gly Ser Pro Ser Pro Thr Pro Ala
3345                3350                3355                3360
Gly Gln Gln Val Leu Asp Ile Asp Ser Cys Leu Asp Ser Ser Val Leu
            3365                3370                3375
Asp Ser Ser Phe Leu Thr Phe Ser Gly Leu His Ala Glu Ala Phe Val
        3380                3385                3390
Gly Gln Met Lys Ser Asp Leu Phe Leu Asp Asp Ser Lys Ser Leu Val
    3395                3400                3405
Cys Trp Pro Ser Gly Glu Gly Thr Leu Ser Trp Pro Asp Leu Leu Ser
    3410                3415                3420
Asp Pro Ser Ile Val Gly Ser Asn Leu Arg Gln Leu Ala Arg Gly Gln
3425                3430                3435                3440
Ala Gly His Gly Leu Gly Pro Glu Glu Asp Gly Phe Ser Leu Ala Ser
            3445                3450                3455
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Pro Tyr Ser Pro Ala Lys Ser Phe Ser Ala Ser Asp Glu Asp Leu Ile
         3460              3465              3470
Gln Gln Val Leu Ala Glu Gly Val Ser Ser Pro Ala Pro Thr Gln Asp
         3475              3480              3485
Thr His Met Glu Thr Asp Leu Leu Ser Ser Leu Ser Ser Thr Pro Gly
         3490              3495              3500
Glu Lys Thr Glu Thr Leu Ala Leu Gln Arg Leu Gly Glu Leu Gly Pro
3505              3510              3515              3520
Pro Ser Pro Gly Leu Asn Trp Glu Gln Pro Gln Ala Ala Arg Leu Ser
         3525              3530              3535
Arg Thr Gly Leu Val Glu Gly Leu Arg Lys Arg Leu Leu Pro Ala Trp
         3540              3545              3550
Cys Ala Ser Leu Ala His Gly Leu Ser Leu Leu Leu Val Ala Val Ala
         3555              3560              3565
Val Ala Val Ser Gly Trp Val Gly Ala Ser Phe Pro Pro Gly Val Ser
         3570              3575              3580
Val Ala Trp Leu Leu Ser Ser Ser Ala Ser Phe Leu Ala Ser Phe Leu
3585              3590              3595              3600
Gly·Trp Glu Pro Leu Lys Val Leu Leu Glu Ala Leu Tyr Phe Ser Leu
         3605              3610              3615
Val Ala Lys Arg Leu His Pro Asp Glu Asp Asp Thr Leu Val Glu Ser
         3620              3625              3630
Pro Ala Val Thr Pro Val Ser Ala Arg Val Pro Arg Val Arg Pro Pro
         3635              3640              3645
His Gly Phe Ala Leu Phe Leu Ala Lys Glu Glu Ala Arg Lys Val Lys
         3650              3655              3660
Arg Leu His Gly Met Leu Arg Ser Leu Leu Val Tyr Met Leu Phe Leu
3665              3670              3675              3680
Leu Val Thr Leu Leu Ala Ser Tyr Gly Asp Ala Ser Cys His Gly His
         3685              3690              3695
Ala Tyr Arg Leu Gln Ser Ala Ile Lys Gln Glu Leu His Ser Arg Ala
         3700              3705              3710
Phe Leu Ala Ile Thr Arg Ser Glu Glu Leu Trp Pro Trp Met Ala His
         3715              3720              3725
Val Leu Leu Pro Tyr Val His Gly Asn Gln Ser Ser Pro Glu Leu Gly
         3730              3735              3740
Pro Pro Arg Leu Arg Gln Val Arg Leu Gln Glu Ala Leu Tyr Pro Asp
3745              3750              3755              3760
Pro Pro Gly Pro Arg Val His Thr Cys Ser Ala Ala Gly Gly Phe Ser
         3765              3770              3775
Thr Ser Asp Tyr Asp Val Gly Trp Glu Ser Pro His Asn Gly Ser Gly
         3780              3785              3790
Thr Trp Ala Tyr Ser Ala Pro Asp Leu Leu Gly Ala Trp Ser Trp Gly
         3795              3800              3805
Ser Cys Ala Val Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly Leu
3810              3815              3820
Ser Leu Glu Glu Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His Asn
3825              3830              3835              3840
Trp Leu Asp Asn Arg Ser Arg Ala Val Phe Leu Glu Leu Thr Arg Tyr
         3845              3850              3855
Ser Pro Ala Val Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu Phe
         3860              3865              3870
Pro Ala Ala Gly Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe Ala
         3875              3880              3885
Leu Arg Arg Leu Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr Ser Val
         3890              3895              3900
Cys Leu Leu Leu Phe Ala Val His Phe Ala Val Ala Glu Ala Arg Thr
3905              3910              3915              3920
Trp His Arg Glu Gly Arg Trp Arg Val Leu Arg Leu Gly Ala Trp Ala
         3925              3930              3935
Arg Trp Leu Leu Val Ala Leu Thr Ala Ala Thr Ala Leu Val Arg Leu
         3940              3945              3950
Ala Gln Leu Gly Ala Ala Asp Arg Gln Trp Thr Arg Phe Val Arg Gly
         3955              3960              3965
Arg Pro Arg Arg Phe Thr Ser Phe Asp Gln Val Ala Gln Leu Ser Ser
         3970              3975              3980
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Ala Ala Arg Gly Leu Ala Ala Ser Leu Leu Phe Leu Leu Leu Val Lys
3985                3990            3995                4000
Ala Ala Gln Gln Leu Arg Phe Val Arg Gln Trp Ser Val Phe Gly Lys
                4005            4010            4015
Thr Leu Cys Arg Ala Leu Pro Glu Leu Leu Gly Val Thr Leu Gly Leu
                4020            4025            4030
Val Val Leu Gly Val Ala Tyr Ala Gln Leu Ala Ile Leu Leu Val Ser
            4035            4040            4045
Ser Cys Val Asp Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val Leu
        4050            4055            4060
Cys Pro Gly Thr Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp His
4065            4070            4075            4080
Leu Ser Pro Leu Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp Gly
                4085            4090            4095
Ala Leu Arg Leu Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala Leu
                4100            4105            4110
Arg Gly Glu Leu Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu Met
            4115            4120            4125
Val Glu Leu Phe Leu Arg Arg Leu Arg Leu Trp Met Gly Leu Ser Lys
    4130            4135            4140
Val Lys Glu Phe Arg His Lys Val Arg Phe Glu Gly Met Glu Pro Leu
4145            4150            4155            4160
Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro Pro
                4165            4170            4175
Pro Ser Ala Gly Ser Asp Ala Ser His Pro Ser Thr Ser Ser Ser Gln
            4180            4185            4190
Leu Asp Gly Leu Ser Val Ser Leu Gly Arg Leu Gly Thr Arg Cys Glu
            4195            4200            4205
Pro Glu Pro Ser Arg Leu Gln Ala Val Phe Glu Ala Leu Leu Thr Gln
    4210            4215            4220
Phe Asp Arg Leu Asn Gln Ala Thr Glu Asp Val Tyr Gln Leu Glu Gln
4225            4230            4235            4240
Gln Leu His Ser Leu Gln Gly Arg Arg Ser Ser Arg Ala Pro Ala Gly
                4245            4250            4255
Ser Ser Arg Gly Pro Ser Pro Gly Leu Arg Pro Ala Leu Pro Ser Arg
            4260            4265            4270
Leu Ala Arg Ala Ser Arg Gly Val Asp Leu Ala Thr Gly Pro Ser Arg
            4275            4280            4285
Thr Pro Leu Arg Ala Lys Asn Lys Val His Pro Ser Ser Thr
    4290            4295            4300
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        <211> 34
        <212> DNA
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